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ABSTRACT

Previous research has indicated that knowledge of the criterion group differentially affects test performance of minority group members. The effects which knowledge of the criterion group has on the test performance of eighth grade Negro and Mexican-American Ss were examined. There was no evidence that comparison with one of four norm groups affected performance through either an aptitude-treatment interaction or through an overall treatment effect. Data on expected performance indicated a significant aptitude-treatment effect with Negro students only. These results suggest that knowledge of a criterion group may not consistently alter the test performance of persons from minority groups. (Author)

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Effects of Knowledge of
Criterion Groups on the
Test Performance of
Negro and Mexican-American Students

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Abstract

Previous research has indicated that knowledge of the criterion group differentially affects test performance of minority group members. The effects which knowledge of the criterion group has on the test performance of eighth grade Negro and Mexican-American SS were examined. There was no evidence that comparison with one of four norm groups affected performance through either an aptitude-treatment interaction or through an overall treatment effect. Data on expected performance indicated a significant aptitude-treatment effect with Negro students only. These results suggest that knowledge of a criterion group may not consistently alter the test performance of persons from minority groups.

Performance on standardized tests is contingent, in part, on a number of variables other than those being measured directly. During the last decade psychologists have become particularly interested in identifying factors which influence the test performance of persons from minority groups. Reviews by Sattler (1970), Katz (1967) and Shuey (1966) provide a partial summary of research directed at this issue.

Much of this research is based on the assumption that racial segregation and social and economic restrictions engender feelings of intellectual inadequacy (Dreger and Miller, 1960). Recognizing the marginal position they often occupy in society, persons from racial and ethnic minority groups may manifest feelings of insecurity, self-degradation and self-consciousness (Katz, 1967). One may expect these feelings and attitudes to have an attenuating effect on their test performance; the effect may be particularly evident when the examiner is from other racial or ethnic groups or when the examinee believes that his performance will be compared with the performance of persons from other racial or ethnic groups.

Katz (1965) poses the following question: How will the presence of a white examiner or white peers affect a Negro's actual test performance or his subjective probability of success or failure? He adds, "...that when I speak of whites as being present in a testing situation I do not mean that they necessarily have to be there in a physical sense--the same effect may be achieved for a specific research purpose by merely informing Negro subjects that their test score will be compared with the scores of white peers" (p2).

Katz, Epps, and Axelsson (1964) examined the effect of anticipated comparison with whites on the intellectual performance of Negro and white male college students. Digit symbol tests were administered to both groups by examiners of their own race. Through the use of three sets of test instruction Ss were assigned to either a local norm group, a national norm group, or no test group. When scores over ten trials of the digit symbol test were combined for the Negroes, group differences were statistically significant: local norms > national norms > no test. The performance of white Ss in the local norm and national norm groups was about the same, but was significantly higher than the performance of Ss in the no test group. All Negro and white Ss reported a low degree of anxiety. However, Negro Ss in the national norm group expressed a much higher concern for doing well than Ss in the local norm group; no similar group differences were noted among white Ss.

In a related study (Baratz, 1967), an anxiety questionnaire was administered to Negro undergraduates by either a white examiner or Negro examiner. Half of the Ss were informed that their scores would be compared with scores from other Negro college students while the other Ss were informed that their scores would be compared with scores from white college students. While the Negro Ss reported greater anxiety when tested by a white examiner, no differences were noted for norm group comparisons.

In an attempt to explore further the question posed by Katz, the present study examines the effects that anticipated comparisons with criterion groups have on the test performance and expectancy of success for southern Negro and Mexican-American students.

Method

Eighty-three boys and 93 girls from the eighth grade of two junior high schools served as Ss. The majority of students attending both schools are from a lower-middle to upper-lower socioeconomic status neighborhood. The schools are approximately one mile apart. While racial integration exists to some extent in both schools, the students within one school are predominantly of Mexican-American ancestry while the students within the other school are predominantly of Negro ancestry.

In order to examine the effects which knowledge of the criterion group has on the test performance and the expectancy of success of minority group members, students were assigned randomly to one of five treatment groups. All students were told by their teachers that they were participating in the standardization of a new test which was being given to many children their own age. Subsequent directions, read by the students, differed in regard to the classification of students with whom their scores presumably would be compared. Directions for Ss in the Local Norm group indicated that their scores would be compared with their age-mates from throughout Austin. Directions for Ss in the National Norm group indicated that their scores would be compared with children throughout the United States. Directions for Ss in the Negro Norm group indicated that their performance would be compared with Negro students their own age. Ss in the Mexican-American norm group were similarly told that their scores would be compared with Mexican-American students their age. Ss in the No Norm group (a control group) were informed that their scores would be compared with other students their age.

An attempt was made to maintain many of the elements of the natural setting within which most standardized tests are administered in schools. Measures of academic aptitude and achievement typically are administered

by teachers to students within their classes. In an attempt to maintain this setting, an academic aptitude test (a revised Quick Word Test described below) was selected and was administered by classroom teachers to students within their class. Further guidelines dictated the need for a test which correlates highly with other measures of academic aptitude and achievement, to which the students had not been previously exposed, and which could be administered in approximately twenty minutes.

A 75-item test was constructed, consisting of all odd-number items from two levels of the Quick Word Test (QWT): Elementary Level, Form Am (designed for grades 4-6) and Level 1, Form Am (designed for grades 7-12 and average adults). Items were selected from both levels in order to design a test of suitable difficulty. Intelligence test data (California Test of Mental Maturity) were acquired routinely from the Ss' cumulative record folders.

Upon completing the revised QWT, Ss were asked to indicate their expectancy of success. They were asked whether they expected to score (1) much lower than..., (2) a little lower than..., (3) about the same as..., (4) a little higher than..., or (5) much higher than most students in their reference groups. Thus, each S within the local norm group expressed his expectancy as a comparison between his perceived performance and his perceptions of the performance of other students in Austin; each S within the No Norm group expressed his expectancy as a comparison between his perceived performance and his perception of the performance of other students. Similar comparisons were made for the other groups.

Results

Norm group differences on test performance and expected performance were examined. In order to test for the possibility that the norm group expectancy might interact with ability, analyses also examined evidence pertaining to an aptitude-treatment interaction effect on test performance and expected performance.

Data from the Negro and Mexican-American samples were analyzed separately. Means and standard deviations of the aptitude (IQ), performance (number correct on the revised QWT), and expected performance (self-rating of expectancy of success) variables are given in Table 1. Also included in Table 1 are the within group correlations for aptitude and actual performance, for aptitude and expected performance and for actual performance and expected performance.

[put Table 1 about here]

Test performance as the dependent variable

No evidence was obtained that the norm group designations affected performance through either an aptitude-treatment interaction or an overall treatment effect. Tests on the homogeneity of regression slopes, with IQ as the predictor and number correct on the revised QWT as the performance measure, produced insignificant F ratios for both the Negro sample ($F=.44$, $df=4,90$) and the Mexican-American sample ($F=.62$, $df=4,63$). Analyses of covariance, to test whether overall treatment effects were different with IQ controlled, indicated no significant effects for the Negro sample ($F=.27$, $df=4,94$) or for the Mexican-American sample ($F=.54$, $df=4,67$).

Expected performance as the dependent variable

A significant aptitude-treatment interaction effect on expected performance occurred for Negro students. The test for the equality of the regression slopes produced an $F=5.17$ ($df=4,90$, $p < .001$). In the No Norm group and the National Norm group, lower aptitude Ss tended to rate their expected performance lower than Ss in the other groups. High aptitude Ss in the No Norm group, and to a lesser extent in the National Norm group, rated their expected performance higher than high aptitude Ss in the Local, Negro, and Mexican-American Norm groups.

The interpretation of this aptitude-treatment interaction also can be aided by examining in Table 1 the correlations between IQ and expected performance (r_{12}) and between actual performance and expected performance (r_{23}) for Negro Ss . The highest positive correlation, and therefore the most realistic expectancy, occurs for the No Norm group. The moderately high correlation for the National Norm group also signifies a somewhat realistic degree of expectancy. Aptitude and expected performance appear to be unrelated in the Negro and Mexican-American Norm groups. In the Local Norm group the variables are negatively correlated, indicating quite unrealistic expectancies within this group.

For the Mexican-American students, an aptitude-treatment interaction effect on expected performance was not found. The test for homogeneity of regression was not significant ($F=.46$, $df=4,63$). Analysis of covariance of performance expectancy for the Mexican-American group, using IQ as the covariate, indicated no overall effect due to treatments ($F=1.78$, $df=4,67$). The correlations between IQ and expected performance and between actual performance and expected performance are generally low or near zero; Ss

In the No Norm and Mexican-American groups evidence a somewhat realistic degree of expectancy. Thus, three groups tend to be relatively poor in predicting their performance levels, with the possible exceptions of the No Norm and Mexican-American groups whose correlations are in the same direction as was the Negro sample's No Norm group.

Discussion

Criterion-group comparisons apparently had little influence on the test performance of eighth grade Mexican-American and Negro students. These results are in agreement with those reported by Baratz (1967) but appear to conflict with those reported by Katz, et al. (1964). Katz et al. reported an overall norm group treatment effect for Negroes when scores over ten administrations of the digit symbol test were summated. An examination of scores from each of the ten trials indicates that norm group differences appear to be significant on only two of the ten trials. Thus, while Katz et al. is able to report an overall treatment effect, the effects of criterion-group comparisons are infrequently apparent. Therefore, currently there is little support for the assumption that criterion-group comparisons systematically influence the test performance of persons from minority groups.

While the effects of criterion group comparisons had little influence on test performance, the effects of the comparisons had a limited influence on expected performance of Negro Ss. Ss in the No Norm and National Norm groups tended to perceive their performance more accurately than Ss in the other three norm groups. Their estimates of expected performance more closely approximate their ability levels. This is in sharp contrast to performance estimates of Ss in the Local Norm group in which lower aptitude Ss expected to do better than higher aptitude Ss.

The generally low relationships between ability and expected performance and between actual and expected performance is surprising. Pupils of the age group in this study have received in school much feedback about their academic performance. Thus, there was good reason to believe that the correlation of the ability measure and the expected performance would be at least moderately positive for the various norm groups. These low correlations could be the result of a lack of student understanding of their own abilities in addition to a lack of knowledge of the performance characteristics of the comparison groups. An examination of the correlations in Table 1 indicates that the highest positive correlations (and thus the most accurate self-perceptions) occurred in the groups with the least specific norm group comparison (No Norm). Therefore, identifying the comparison group does not help the students estimate their performances more accurately, and it actually interferes with the estimation in some instances (e.g., Local Norm Group).

Understanding one's own abilities presumably is a necessary antecedent to making suitable decisions about vocational and academic plans. The unexpected inability of many students in this study to perceive accurately their capabilities suggests that such decisions may be influenced by capricious and fortuitous circumstances and, at best, may be made without knowledge of one of the factors most critical to such a decision.

In summary, it is important to reconsider the question posed by Katz in 1965 in light of more current evidence. The examiner's race may (Bucky and Banta, 1972; Kennedy and Vega, 1965) or may not (Costello, 1970; Yando, Zigler, and Gates, 1971) influence Negroes' test performance. Also, criterion-group comparisons appear to unsystematically

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influence their test performance. While the evidence is very meager, there is justification for differentiating between and examining separately the influence of the examiner's racial characteristics and the influence of the comparison groups' racial characteristics; presently there is no direct evidence that informing Negroes that their test scores will be compared with the scores of white peers has the same effect as being tested by a white examiner.

Also, it is clear (Sattler, 1970) that no one single factor systematically influences the test performance of Negroes. Their performance on psychological measures is, in part, a function of the type of test, the reinforcement conditions, subject variables (e.g., SES, age, and sex) and examiner variables (e.g., SES, sex, attitudes toward Negroes, and responsiveness to Ss). Research directed toward examining the influences of the examiner or comparison groups should include multiple independent variables in order to identify the complex interactions which influence the test performance of persons from minority groups.

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Table 1
Statistics for the Negro and Mexican-American
Samples in Five Treatment Groups

Sample	Norm Group	n	Variable 1		Variable 2		Variable 3		Variable 4		
			IQ (1)		Number Correct on QWT (2)		Expected* Performance (3)				
			M	SD	M	SD	M	SD	12	13	23
Negro	Local	21	91.9	12.1	42.5	8.8	3.10	.43	.64	-.46	-.47
Negro	Nat'l	22	93.4	13.1	40.9	10.1	2.95	.77	.74	.39	.33
Negro	Negro	21	95.3	11.2	42.7	8.0	3.19	.50	.44	-.20	.13
Negro	Mex-Am	21	95.5	13.2	43.5	9.7	3.50	.74	.55	-.16	.11
Negro	No Norm	17	95.9	12.8	42.8	9.6	3.12	.86	.56	.69	.45
Mex-Am	Local	16	84.4	11.8	37.8	6.1	2.37	.60	.55	-.06	-.24
Mex-Am	Nat'l	16	83.2	13.6	35.4	8.4	2.19	.88	.79	.26	.08
Mex-Am	Negro	15	81.9	12.5	34.8	6.7	2.73	.77	.60	.09	-.11
Mex-Am	Mex-Am	14	86.0	14.4	38.2	7.5	2.77	.97	.58	.34	.37
Mex-Am	No Norm	13	85.3	14.5	35.9	7.6	2.15	.86	.76	.41	.39

*Expected performance levels were rated on a scale from 1 (lowest) to 5 (highest).